Tshwane University of Technology

We empower people

YEAR: 2014
EXAMINATION: B

MAY MAIN

SUBJECT NAME:	DEVELOPMENT SOFTWARE IV
SUBJECT CODE:	DSO401T
QUALIFICATION(S):	B.TECH SOFTWARE ENGINEERING (BTIS05)

PAPER DESCRIPTION: Computer-based   **DURATION:** 4 Hrs   **PAPER:** Only

SPECIAL REQUIREMENTS

- ☐ NONE
- ☐ NON-PROGRAMMABLE POCKET CALCULATOR
- ☐ SCIENTIFIC CALCULATOR
- ☐ COMPUTER ANSWER SHEET
- ☐ GRAPH PAPER
- ☐ DRAWING INSTRUMENTS

OTHER: Only database table

INSTRUCTIONS TO CANDIDATES: Answer all questions

TOTAL NUMBER OF PAGES INCLUDING COVER PAGE: 4
TOTAL NUMBER OF ANNEXURES: 0

EXAMINER:	Mr. SA Odunaike	**FULL MARKS:**	100
MODERATOR:	Mr. A Dandazi	**TOTAL MARKS:**	100

FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY

	DEVELOPMENT SOFTWARE IV
Tshwane University of Technology *We empower people*	**DSO401T**

Examination B Time: 4 Hours Full Marks: 100	**Examiner:** SA Odunaike **Moderator:** A Dandadzi

Student number:

Surname		Initials	
			%

QUESTION	1	3	4	5	MAX	Signatures
TOTAL MARK	40	20	20	20	100	
EXAMINER MARK						
STUDENT MARK						

GENERAL INSTRUCTIONS

- Read the *program requirement and question* carefully before attempting to formulate a solution.
- Create a PL/SQL block to answer the questions that follows.
- Use Oracle9i database and carefully study the sample data.
- All output must be displayed by using the DBMS package built-in.
- Remember to SET SERVEROUTPUT ON in order to display the output generated from your PL/SQL block.
- Type / create your program using notepad only, states claerly the question number being answered
- Save your file as **StudentNumber** and upload the test file only

Question 1 [40]

A report is required to display the department / employee information as follow:

1.1 Write a procedure or a named block that will receive the department identification number as a parameter. The procedure will extract relevant information about the particular department as detailed below: (10)

Department: 30-Purchasing
Department Manager: Den Raphaely
Location: Seattle / Washington / United States of America / Americas

1.2 Write a PL/SQL procedure that will accept the department identification number as a parameter. The procedure will extract and display all the employee(s) information working in the given department as depicted below: (10)

Staff members:
1. 115 Alexander Khoo   Purchasing Clerk   1995   3100
2. 116 Shelli Baida   Purchasing Clerk   1997   2900
3. 117 Sigal Tobias   Purchasing Clerk   1997   2800
4. 118 Guy Himuro   Purchasing Clerk   1998   2600
5. 119 Karen Colmenares   Purchasing Clerk   1999   2500

1.3 Write a PL/SQL function that will accept the same department identification number as above as a parameter and based on that, it will extract and calculate the total salary budget for the given department as depicted below: (10)

Total Salary: R24,900.00
No of staff: 6

1.4 Write an anonymous block that will receive department identification number and then call all the procedures and function as specified in Q1.1 –Q1.3 above (10)

Enter value for department_id: 40
Department: 40-Human Resources
Department Manager: Susan Mavris
Location: London / London / United Kingdom / Europe
Staff members:
Total Salary: R6,500.00
No of staff: 1

Question 2 [20]

A procedure is required to insert new records into the department table depending on the user input specifications. The user sometimes specify the department# and the rest of the data otherwise the user make use of a automated generation department# and the rest of the data to insert records as the case may be. The following programs are required:

Create a package called DEPTINFO_PACKAGE. The package specification and body must be created for procedure(s) needed to insert new department information based on the scenario(s) above. All the procedures are public inside the package.

Question 3 [20]

Create a procedure called Department Information that accepts two (2) parameters (file directory and file name) and generates a text file summary report of all departments (see sample output below). Make provisions to handle errors resulting from the use of UTF_FILE package.

REPORT: Department Information   **GENERATED ON [today's date]**

DEPARTMENT:	MANAGER:	CITY:	No. of Staff
10-Administration	Jennifer Whalen	Seattle	1
20-Marketing	Michael Hartstein	Toronto	2
30-Purchasing	Den Raphaely	Seattle	6
40-Human Resources	Susan Mavris	London	1
50-Shipping	Adam Fripp	South San Francisco	45
60-IT	Alexander Hunold	Southlake	5
70-Public Relations	Hermann Baer	Munich	1
80-Sales	John Russell	Oxford	34
90-Executive	Steven King	Seattle	3
100-Finance	Nancy Greenberg	Seattle	6
110-Accounting	Shelley Higgins	Seattle	2

End of Report

Question 4 [20]

Write a trigger that controls the insertion or update of employees' salaries. The trigger should raise application errors with relevant messages in the following instances:

- When the employee's salary is updated to an amount higher than his/her manager
- When the new salary is less than the current salary
- All employees' salaries can be updated except for the employee with job id '**AD_PRES**'